

CLAIMS

1. A reclosable bag comprising: a receptacle having a mouth and an interior volume; a string zipper installed in said mouth; a slider mounted to said string zipper; and a tamper-evident feature that blocks access to all or a portion of said interior volume.

5                   2. The bag as recited in claim 1, wherein said tamper-evident feature comprises a layer of film material.

10                 3. The bag as recited in claim 2, wherein said tamper-evident feature further comprises a peel seal.

15                 4. The bag as recited in claim 2, wherein said receptacle and said tamper-evident feature have respective first portions that are merged together and joined to one side of said string zipper.

15                 5. The bag as recited in claim 4, wherein said receptacle and said tamper-evident feature have respective second portions that are merged together and joined to another side of said string zipper.

20                 6. The bag as recited in claim 5, wherein said first portion of said receptacle is sandwiched between said first portion of said tamper-evident feature and said string zipper, said second portion of said receptacle is sandwiched between said second portion of said tamper-evident feature and said string zipper, and said tamper-evident feature further comprises third and fourth portions respectively integrally connected on one side to said first and second portions of said tamper-evident feature, the other side of said third portion of said tamper-evident feature being joined to the other side of said fourth portion of said tamper-evident feature to form a cover over said zipper.

25                 7. The bag as recited in claim 5, wherein said first portion of said tamper-evident feature is sandwiched between said first portion of said receptacle and said string zipper, said second portion of said tamper-evident feature is sandwiched between said second portion of said receptacle and said

string zipper, and said tamper-evident feature further comprises a third portion having one side integrally connected to said first portion of said tamper-evident feature and another side integrally connected to said second portion of said tamper-evident feature, respective ends of said third portion being joined to said receptacle to form a sealed space inside said interior volume for product.

5                   8. The bag as recited in claim 5, wherein said first portion of said tamper-evident feature is sandwiched between said first portion of said receptacle and said string zipper; said second portion of said tamper-evident feature is sandwiched between said second portion of said receptacle and said string zipper, and said tamper-evident feature further comprises third and fourth portions respectively integrally formed on one side with said first and second portions of said tamper-evident feature, and a peel seal joined to the other sides of said third and fourth portions of said tamper-evident feature.

10                  9. The bag as recited in claim 4, wherein said first portion of said tamper-evident feature is sandwiched between said first portion of said receptacle and said string zipper, and said tamper-evident feature further comprises a second portion integrally formed on one side with said first portion of said tamper-evident feature, and a peel seal joined to the other side of said second portion of said tamper-evident feature and to said receptacle.

20                  10. The bag as recited in claim 4, wherein said first portion of said tamper-evident feature is sandwiched between said first portion of said receptacle and said string zipper, and said tamper-evident feature further comprises a second portion integrally formed on one side with said first portion of said tamper-evident feature and fused on the other side to said receptacle.

25                  11. The bag as recited in claim 10, wherein said second portion of said tamper-evident feature comprises a line of weakened tear resistance.

12. The bag as recited in claim 1, wherein said tamper-evident feature comprises a header joined to said receptacle and covering said zipper.

13. The bag as recited in claim 1, wherein said tamper-evident feature comprises a membrane joined to said receptacle in a manner that partitions said interior volume.

14. The bag as recited in claim 13, wherein said membrane  
5 comprises a line of weakened tear resistance.

15. The bag as recited in claim 13, further comprising a mass of product disposed in said interior volume of said receptacle.

16. A reclosable bag comprising:

a zipper comprising first and second flangeless zipper strips, said  
10 first zipper strip comprising a first base and a first closure profile projecting from said first base, and said second zipper strip comprising a second base and a second closure profile projecting from said second base and engaged with said first closure profile;

a film structure comprising: a first attachment portion joined to said first base of said first zipper strip; a second attachment portion joined to said second base of said second zipper strip, said zipper being disposed between said first and second attachment portions of said film structure; a receptacle portion integrally connected to said first and second attachment portions and having an interior volume; and a tamper-evident feature portion having one side integrally connected to said first attachment portion, said tamper-evident feature portion blocking access to all or a portion of said interior volume; and  
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25 a slider mounted to said zipper and comprising first and second side walls having interior surfaces confronting opposing portions of said first and second attachment portions respectively.

17. The bag as recited in claim 16, wherein the other side of said tamper-evident feature portion is integrally connected to said second attachment portion, said tamper-evident feature portion forming a header that

covers said zipper.

18. The bag as recited in claim 17, wherein said tamper-evident feature portion comprises first and second header walls that are joined together along opposing portions proximal to respective edges of said first and second header walls.

19. The bag as recited in claim 16, wherein the other side of said tamper-evident feature portion is integrally connected to said second attachment portion, and the ends of said tamper-evident feature portion are joined to said receptacle portion in a manner that partitions said interior volume.

10 20. The bag as recited in claim 19, wherein said tamper-evident feature portion comprises a line of weakened tear resistance.

21. The bag as recited in claim 16, further comprising a mass of product disposed in said interior volume of said receptacle portion.

15 22. The bag as recited in claim 16, wherein each of said first and second attachment portions has a thickness greater than a thickness of either said tamper-evident feature portion or said receptacle portion.

20 23. The bag as recited in claim 16, wherein said receptacle portion comprises first and second receptacle walls that are joined together along opposing portions proximal to respective edges of said first and second receptacle walls.

24. The bag as recited in claim 16, wherein the other side of said tamper-evident feature portion and the ends of said tamper-evident feature portion are joined to said receptacle portion in a manner that partitions said interior volume.

25 25. The bag as recited in claim 24, wherein said tamper-evident feature portion comprises a line of weakened tear resistance.

26. A reclosable bag comprising:

first and second flangeless zipper strips having mutually interlockable closure profiles that are joined at opposite ends of said first and second zipper strips;

5                   a peel seal;

a first layer of film material comprising a first portion joined to a back of said first flangeless zipper strip, a second portion joined to one side of said peel seal, and a third portion connecting said first and second portions of said first layer;

10                  a second layer of film material comprising a first portion joined to a back of said second flangeless zipper strip, a second portion joined to another side of said peel seal, and a third portion connecting said first and second portions of said second layer;

15                  a third layer of film material comprising a portion merged with said first portion of said first layer;

a fourth layer of film material comprising a portion merged with said first portion of said second layer, portions of said third and fourth layers being joined to form a receptacle; and

20                  a slider mounted to said first and second flangeless zipper strips, said first portion of said first layer and said merged portion of said third layer being disposed between said back of said first flangeless zipper strip and a confronting first portion of said slider, and said first portion of said second layer and said merged portion of said fourth layer being disposed between said back of said second flangeless zipper strip and a confronting second portion of said slider.

25                  27. The bag as recited in claim 26, wherein said receptacle has an interior volume that is sealed closed by said first and second layers of film

material when said peel seal is intact.

28. The bag as recited in claim 26, wherein said first through fourth layers are sealed together at respective sides of said receptacle..

29. A reclosable bag comprising:

5               first and second flangeless zipper strips having mutually interlockable closure profiles that are joined at opposite ends of said first and second zipper strips;

a peel seal;

10              a first layer of film material comprising a first portion joined to a back of said first flangeless zipper strip, a second portion joined to one side of said peel seal, and a third portion connecting said first and second portions;

15              a receptacle comprising second and third layers of film material joined together along a portion of a periphery, said second layer of film material comprising a portion merged with said first portion of said first layer, and said third layer of film material comprising a first portion joined to a back of said second flangeless zipper strip, a second portion joined to another side of said peel seal, and a third portion connecting said first and second portions of said third layer; and

20              a slider mounted to said first and second flangeless zipper strips, said first portion of said first layer and said merged portion of said second layer being disposed between said back of said first flangeless zipper strip and a confronting first portion of said slider, and said first portion of said third layer being disposed between said back of said second flangeless zipper strip and a confronting second portion of said slider.

25              30. The bag as recited in claim 29, wherein said receptacle has an interior volume that is sealed closed by said first layer of film material when said peel seal is intact.

31. The bag as recited in claim 29, wherein said first through third layers are sealed together at respective sides of said receptacle.

32. A method of manufacture comprising the following steps:

(a) folding a first portion of a monolithic film structure to form a generally M-shaped first gusseted end comprising first through fourth layers of film material;

(b) inserting a first string zipper between said second and third layers of said first gusseted end;

(c) sealing said first and second layers of said first gusseted end to each other and to one side of said first string zipper;

(d) sealing said third and fourth layers of said first gusseted end to each other and to another side of said first string zipper; and

(e) inserting a first slider on said first string zipper after steps (c) and (d).

33. The method as recited in claim 32, further comprising the step of sealing respective portions of said monolithic film structure together along a portion of a first periphery to form a first enclosed receptacle.

34. The method as recited in claim 33, further comprising the step of placing a first mass of product on a first non-peripheral portion of said monolithic film structure before said first enclosed receptacle is formed, said first mass of product being contained inside said first enclosed receptacle when the bag is finished.

35. The method as recited in claim 32, further comprising the step of weakening the tear resistance of said monolithic film structure along a line before said folding step, said line of weakened tear resistance being located so that it will be proximal to a central fold of said first gusseted end after said

folding step.

36. The method as recited in claim 32, further comprising the step of trimming unsealed film material at the peaks of said generally M-shaped first gusseted end.

5 37. The method as recited in claim 34, further comprising the following steps:

(f) folding a second portion of said monolithic film structure to form a generally M-shaped second gusseted end comprising first through fourth layers of film material;

10 (g) inserting a second string zipper between said second and third layers of said second gusseted end;

(h) sealing said first and second layers of said second gusseted end to each other and to one side of said second string zipper;

15 (i) sealing said third and fourth layers of said second gusseted end to each other and to another side of said second string zipper; and

(j) inserting a second slider on said second string zipper after steps (h) and (i).

20 38. The method as recited in claim 37, further comprising the step of sealing respective portions of said monolithic film structure together along a portion of a second periphery to form a second enclosed receptacle.

25 39. The method as recited in claim 38, further comprising the step of placing a second mass of product on a second non-peripheral portion of said monolithic film structure before said second enclosed receptacle is formed, said second mass of product being contained inside said second enclosed receptacle when the bag is finished.

40. The method as recited in claim 39, further comprising the step of cutting said monolithic film structure in a sealed zone that connects said first and second enclosed receptacles to form separate bags respective filled with said first and second masses of product.

5                 41. A method of manufacturing a reclosable bag, comprising the following steps:

                   (a) arranging and sealing film material to form a receptacle having a mouth and an interior volume with a tamper-evident feature that blocks access to said interior volume;

10                 (b) prior to completion of said receptacle with tamper-evident feature, joining opposing portions of said film material, that will form said mouth of said receptacle, to respective backs of first and second flangeless zipper strips;

15                 (c) aligning said first and second flangeless zipper strips with each other; and

20                 (d) after steps (b) and (c), mounting a slider onto said aligned first and second flangeless zipper strips with respective portions of said opposing portions of said film material being disposed between respective side walls of said slider and respective backs of said first and second flangeless zipper strips.

42. The method as recited in claim 41, further comprising the step, performed prior to completion of said receptacle with tamper-evident feature, of placing a mass of product in contact with a portion said film material that will in part bound said interior volume.

25                 43. The method as recited in claim 41, wherein said sealing step in step (a) comprises applying a length of peel seal material to a portion of said film material.

44. The method as recited in claim 41, wherein said arranging step in step (a) comprises folding a web of film material to form a generally M-shaped gusseted end, said opposing portions of said film material being part of said generally M-shaped gusseted end.

5                 45. The method as recited in claim 41, wherein said arranging step in step (a) comprises folding first and second webs of film material of different width into generally U-shaped structures having marginal edges that are generally aligned, said opposing portions of said film material comprising respective portions of said first and second webs proximal to said marginal edges.

10                 46. The method as recited in claim 41, wherein said arranging step in step (a) comprises folding first and second portions of film material to form first and second flaps, and said sealing step in step (a) comprises joining a length of peel seal material to said first and second flaps.

15                 47. The method as recited in claim 41, wherein said arranging step in step (a) comprises folding a web of film material so that one marginal edge of said web is proximal to a portion of said web located at a predetermined distance from the other marginal edge of said web, and said sealing step in step (a) comprises joining said one marginal edge to said web portion located at a predetermined distance from said other marginal edge.

20                 48. The method as recited in claim 41, wherein said arranging step in step (a) comprises folding a web of film material so that one marginal edge of said web is proximal to a portion of said web located at a predetermined distance from the other marginal edge of said web, and said sealing step in step (a) comprises joining a length of peel seal material to said one marginal edge and said web portion located at a predetermined distance from said other marginal edge.

25                 49. The method as recited in claim 41, wherein said arranging step in step (a) comprises folding a web of film material to form a generally U-

shaped structure, and placing a panel of film material with one marginal edge of said panel generally aligned with one marginal edge of said folded web and the other marginal edge of said panel being proximal to a portion of said folded web located at a predetermined distance from the other marginal edge of said folded web, and said sealing step in step (a) comprises joining a length of peel seal material to said other marginal edge of said panel and to said portion of said folded web located at a predetermined distance from said other marginal edge of said folded web, said opposing portions of said film material comprising respective portions of said folded web proximal to said marginal edges of said folded web and a portion of said panel proximal to said one marginal edge of said panel.

5                   50. The method as recited in claim 41, wherein step (a)  
10                  comprises the following steps:

15                  folding a web of film material along first, second and third fold  
20                  lines to form a serpentine profile comprising first and second inner legs and first  
                      and second outer legs, said first outer leg being connected to said first inner leg  
                      at said first fold line, and said second outer leg being connected to said second  
                      inner leg at said third fold line, wherein confronting portions of said first inner  
                      leg and said first outer leg form said opposing portion joined to said first zipper  
                      strip, and confronting portions of said second inner leg and said second outer  
                      leg form said opposing portion joined to said second zipper strip;

25                  joining respective portions of said first and second inner legs of  
                      said web to form said receptacle;

                      folding said first outer leg along a fourth fold line;

                      folding said second outer leg along a fifth fold line; and

                      joining respective opposing portions of said folded first and  
                      second outer legs to each other, thus forming a header that covers said zipper  
                      strips.

ITW-14081

51. The bag as recited in claim 12, wherein said header comprises a hang hole.